



HEAR NO EVIL — at least about pulsed power fusion. This group of AT&T Technologies executives, the AT&T version of Large Staff, met in Albuquerque last month and spent a morning in the Technology Transfer Center getting updated on Sandia's latest accomplishments, then climaxed their visit with a tour of Area IV. Here Bob Turman, supervisor of Pulsed Power Research Division 1252, has just warned the group that DEMON firing is imminent. Among the members of the

group were Don Procknow, Vice-Chairman of the Board and Chief Operating Officer of AT&T Technologies, Inc., and Tom Thomsen, President of AT&T Technology Systems Group; both are members of Sandia's board of directors. The meeting was a sort of homecoming for five AT&T people who have been part of Sandia Management in the past; see photos on Page Seven.

LAB NEWS

VOL. 37, NO. 24

SANDIA NATIONAL LABORATORIES

DECEMBER 6, 1985

Lookit That Buncha Numbers, Mervyn

LAB NEWS Gets Read — Even Liked

The poking and prodding is over. And, all in all, we're in pretty good shape.

That is, every two years LAB NEWS invites its readers to give us a sort of physical exam — what are we doing that you like? that you don't like? that you remember? that you don't give a damn about?

Like most surveys, ours asked for lots of quantifiable data — the sort of thing that keeps programmers programming and computers computing. But it also offered the opportunity for comments throughout; we'll cover those in another story in this issue.

The most important statistical data:

1. Eight percent of all Sandians rate the LAB NEWS as great, 54 percent as very good, for a combined positive rating of 62 percent. Thirty-five percent said "okay," 3 percent had no opinion, and 1 percent said "only fair." No one said "poor."
2. Almost 40 percent read most of each issue, another 50 percent at least half of it.
3. Of those who have family members at home, 65 percent take the paper home, and 58 percent report that a family member regularly reads at least some of it.
4. The most popular types of articles (those rated outstanding or good) are the technical stories and management news (87 percent and 84 percent, respectively).

5. The least popular features are Savings Bond News (with 27 percent rating it outstanding or good), VIA News (39 percent), Colloquium Reports (41 percent), ECP News (40 percent), and Retiree Roundup (44 percent).
6. More detail was requested for Medical Corner (29 percent) and Feedback (27 percent). Less detail was requested for



LAB NEWS SURVEY went out to more than 800 Sandians. And 86 percent responded. This year's survey was the first one that produced statistically valid results, thanks to help from Statistics, Computing, and Human Factors Division 7222, supervised by Bob Easterling (right).

7. Specific stories most frequently regarded as good were the State of the Labs (60 percent), inertial confinement fusion special issue (59 percent), and Technical Accomplishments 1984 (56 percent). No more than 2 percent considered any story bad.
 8. For the last year we've been providing some historical context with major stories. That context is considered interesting, worth doing, by 79 percent.
 9. The group most frequently singled out as not getting enough LAB NEWS attention is support personnel. (One incisive reader noted, however, that "The nerds have always been left out!")
- Except for number 9 above, all our survey results are (for the first time) scientifically verifiable, thanks to the efforts of Kathleen Diegert in Statistics, Computing, and Human Factors Division 7223. Summer hire Sharon Ball was the LAB NEWS honcho for the survey.

So, now that we know all this, what's our response? That calls for another list:

1. Many thanks, 54 percent of you. Hugs and kisses for another 8 percent who checked outstanding.
2. Nearly 90 percent read at least half of

(Continued on Page Six)

Antojitos

We're an AT&T Subsidiary? I don't know about your office or lab, but over here in the far reaches of Area I our phones are our most used --and most cursed--tools.

Scenario 1: The phone rings somewhere in the office. The rest of my tiny crew is out. I start pushing buttons, hoping to reach the caller before he/she gives up.

Scenario 2: I'm talking on my line, and if it's busy my calls "ring down" to another phone a room away. I'm expecting a call from my director. The phone rings. I'd love to punch the red button tantalizingly labeled HOLD, but I know that doing so will only cut off the person I'm talking with. So I try to explain to my caller what I have to do -- run to the next cubicle and take the call there.

Scenario 3: I'm using my line. So calls for me interrupt whatever my writer is doing. Then she has to fetch me my messages when she gets the chance. Isn't there something called "Call Waiting"?

Scenario 4: I have simply got to get in touch with some supervisor immediately. His/her phone is busy. Re-dial. Re-dial. Re-dial. Re-dial. Ad infinitum. Have we not invented phones that remember the number I'm trying to reach?

Scenario 5: (Fantasy/nightmare) I'm demoted to an organization that doesn't even have pushbutton phones. I die of dialing finger gangrene. The pallbearers call their lovers on cordless phones as they convey my remains graveward.

* * *

Come On, Proofreaders! DANGER: FLAMMIBLE MATERIAL says the sign on the Bldg. 805 loading dock. Sorry, it's "flammable," which for some inexplicable reason means the same thing as "inflammable" but which is the preferred form because some people think "inflammable" means "not flammable." Got it?

Every "controlled property" item at Sandia, says my correspondent (no, I haven't checked each one personally), carries a stick-on label with an R-number that identifies the item as property of Sandia "Laboratories." Well, that's the way the English probably think we ought to spell the word -- they know enough to put the accent on the second syllable: la-BOR-a-trees. ●BH

* * *

Al decir las verdades se pierden las amistades. (Spanish: In telling the truth friendships are lost.)

Community Focus Series

Well-Known Artist To Speak

Albuquerque artist Wilson Hurley, best known for his landscapes of the West's open spaces, will present the second talk in the Community Focus series on Tuesday, Dec. 10, at 12 noon at the Technology Transfer Center.

Hurley will share his thoughts on creativity with the Community Focus audience. Though everyone comes up with new ideas from time to time, the odds that a new idea is a good one are about a thousand to one, according to Hurley. The biggest stumbling block, he says, is a person's self-protective attitude; the price paid for safety and anonymity is lack of creativity.

Hurley, son of Patrick Hurley (Secretary of War under President Hoover from 1929-33), graduated from the U.S. Military Academy in 1945 and served as a pilot in an air-sea rescue unit in the Philippines until 1949. In 1968-69, he was a forward air controller with the U.S. Air Force in Vietnam.

He also spent several years as a lawyer, and two years as an engineer at Sandia (1958-60). In 1964, at the age of 40, he devoted himself full-time to painting. He's had a string of one-man shows, the most recent being a retrospective exhibition of his work at the Albuquerque Museum. (The museum exhibit ran from Sept. 22 through last Sunday.)

In an interview with *New Mexico Magazine* last spring, Hurley said, "I look at life as the capacity to live, to produce, to create, to enjoy, and I don't feel as if anybody has a warranty. Nobody knows what grade he gets for the course. All he can do is keep his honor bright and paint as well as he can and try to improve. I have fun doing that. I really do like doing it, so life is a pleasure."

Christmas Project? Let Us Know

Over the years various Sandia organizations have taken on projects during the holidays to help those less fortunate than ourselves. If you have a project planned for Christmas 1985, LAB NEWS would like to know about it. Please give Phyllis Wilson a call on 4-7842 right away!

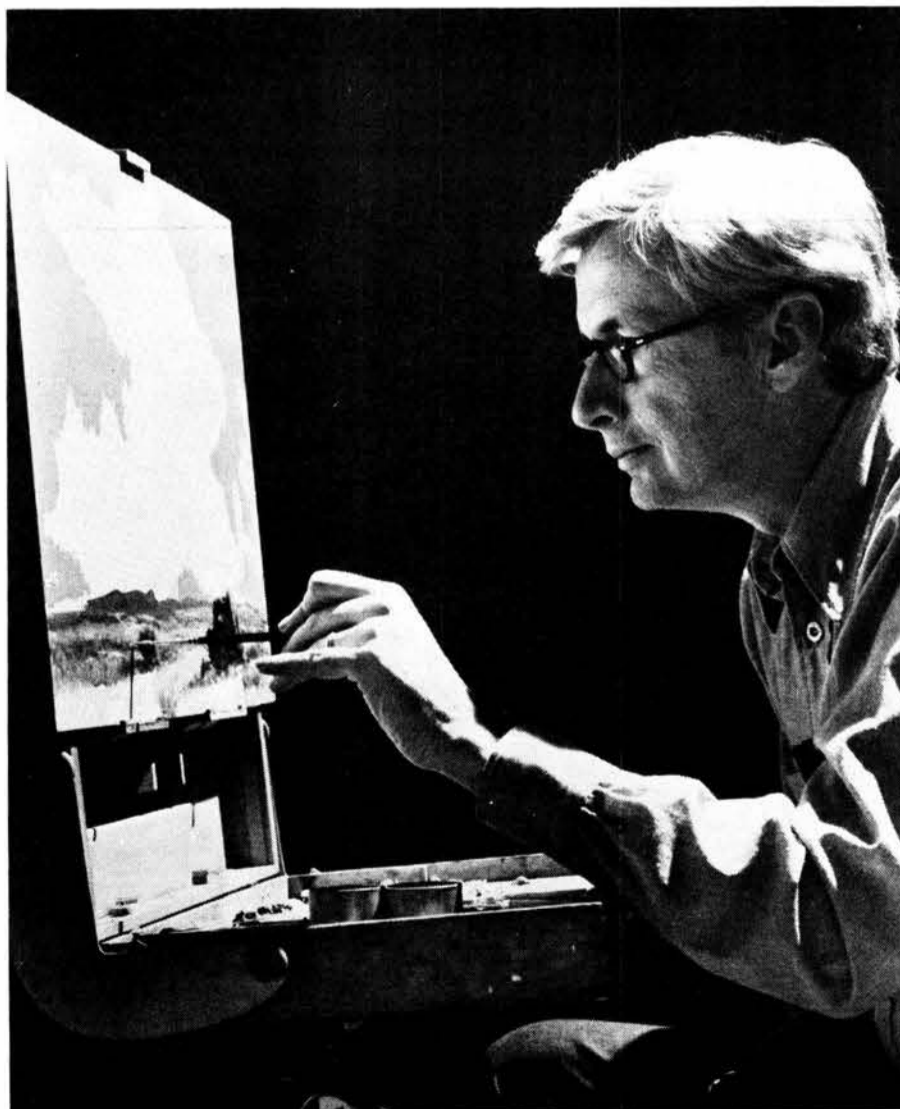
But Of Course



"Exact differentials are usually integrable by inspection."

"The amount of inspection, of course, will vary with the complexity of the differential."

R.E. Dickerson,
Molecular Thermodynamics, 1969



ARTIST WILSON HURLEY works on a landscape in his studio. Hurley will share his thoughts on creativity in a Community Focus series talk next Tuesday, Dec. 10, at noon in the Technology Transfer Center.



LAB NEWS

Published Fortnightly on Fridays

SANDIA NATIONAL LABORATORIES

An Equal Opportunity Employer

ALBUQUERQUE, NEW MEXICO
LIVERMORE, CALIFORNIA
TONOPAH, NEVADA
AMARILLO, TEXAS

Sandia National Laboratories is operated by Sandia Corporation, a subsidiary of AT&T Technologies, Inc., and a prime contractor to the U.S. Department of Energy.

BRUCE HAWKINSON, Editor
PHYLLIS WILSON, Writer
GERSE MARTINEZ, Assistant Photographer
BARRY SCHRADER, Livermore Reporter

Member, International
Association of Business Communicators

Supervisory Appointments



MEL LaGASCA to supervisor of Computer Operations Section First Shift 8236-1, effective Nov. 1.

He joined Sandia at Livermore in July 1968. His first assignments at Sandia were in electrical drafting, then in instrumentation and calibration. For the next 12 years he was a part of the data processing group. His most recent assignment in the Networking and Communications Division involved design and operational work on the Technical Control Center located in the Central Computing Facility.

Mel holds an Associate of Science degree in electronics from San Joaquin Delta College in Stockton. Mel's other interests include municipal league basketball, martial arts, and chess. He's also a member of the American Society of Certified Engineering Technicians and serves as secretary of the Associated Filipino Organizations of San Joaquin County. He and his wife Gail and young son live in Tracy.



SHIRLEY DALRYMPLE to supervisor of Computer Operations Section Second Shift 8236-2, effective Nov. 16.

She joined Sandia Livermore in 1980 as a keypunch operator in the data entry area of the Computing Center. More recently she has been a computer operator.

Shirley came to Sandia from LLNL, where she had been in data processing services. Her education includes coursework in data processing at Chabot College. She has three sons — two married, one in college. A resident of Livermore for 16 years, Shirley is active in her church's Sunday School and Bible study programs.

DON SWEENEY to supervisor of Imaging Technology Division 8355, effective Nov. 16.

He came to Sandia Livermore in 1983 after 11 years as a professor of mechanical engineering at Purdue University where he worked in the Applied Optics Laboratory. His work at Sandia has involved optical image processing in the combustion research program. He has also been involved in digital image processing, which can be used for target identification and tracking as well as for imaging combustion diagnostics.

Don holds BS and MS degrees in mechanical engineering and a PhD in optics, all from the University of Michigan. His professional affiliations include the American Society of Mechanical Engineers and service on a number of organizing committees of the Optical Society of America.

Don's outside interests included skiing and woodworking. He and his wife Jill Hruby (8473) live in Alamo.



SANDIA LIVERMORE NEWS

VOL. 37 NO. 24

SANDIA NATIONAL LABORATORIES DECEMBER 6, 1985

Hacker Attack

Through the Electronic Underground



Sandians heard a first-hand account of the phenomenon of teenage computer hackers last month when Richard Sandza detailed his travels through America's electronic underground. Sandza, a staffer for *Newsweek* magazine and the first major media writer to cover hackers in depth, has himself been the focus of the wrath of hackers for exposing the tricks of their trade in a national publication.

"The typical hacker is a very bright teenage male who loves to sit in front of his computer terminal for hours on end, carefully picking his way into someone else's computer system for tidbits of interest," said Sandza. Computer hackers use colorful fictional names such as Lex Luthor, King Blotto, Dr. No, Whiz Kid, and Captain Queeg for identification on underground billboards more secure than many commercial and government systems. Such billboards are used to exchange information via electronic mail.

The hacker movement got its start in Greenwich Village at a hangout where *Tap* magazine was founded. The magazine prides itself in revealing how to cheat the phone company out of long distance charges by using illegal tone generators known as "blue boxes." Early in the movement, hackers developed a menu-driven software program called The Cat's Meow that allows the Apple Cat modem to scan every number within a selected telephone area code and deliver, overnight, a printout of those phones that are connected to computers. The program also uses "blue box" techniques to avoid toll charges.

In part, Sandza blames the schools for the hacker movement: "All too frequently, schools ask teachers who have merely taken a course in computer education to teach computing," he said. "Often these

educators know far less about real computing than their smarter students. What happens then is that the kids get bored and go home and teach themselves how to use their PCs — hooking into networks and then sharing their new-found, and often ill-gotten, information via computer bulletin boards."

Following his first magazine piece, "Night of the Hackers" in the August 1983 *Newsweek*, Sandza was besieged by troubles from these mischievous non-conformists who used their Apple and Commodore home computers to play some serious games with his bank account and credit cards. Some of the teenagers hacked their way into bank and credit bureau computer files, obtained Sandza's personal credit card numbers, and charged goods worth a fortune to his accounts. The merchandise ranged from half a dozen funeral wreaths to an \$1100 TV set.

As a result of this harassment, Sandza did a follow-up story, "Revenge of the Hackers," which received nationwide media attention. Since then, he has devoted his spare time to working with the more promising hackers, trying to convince them to turn their talents into marketable and legitimate computer skills. He has been able to gain their trust and frequently communicates with their bulletin boards via computer hookups to exchange ideas.

His message to Sandia and Lawrence Livermore was to "find these kids and rehabilitate them, harness their creativity, and bring them into the mainstream of [computing] society. After all, these are the brains who may implement SDI, say, which is probably a generation away." He calls this his "little crusade" and suggests organizing a "Big Brothers of Computing" to teach the young enthusiasts what it's like in the real world of large computer systems such as VAX and Cray facilities.

Sandza's parting advice to computer users on how to avoid the intrusion of hackers was this: Switch to a faster baud rate, such as 9600, since most of the lower budget home computer modems can be operated only in the range from 300 to 1200 baud.

Congratulations

Lori and John (8183) Rosenow, a girl, Jamie Lynn, Nov. 19.

Sympathy

To Mel Callabresi (8242) on the death of his father in Livermore, Nov. 21.

To Dennis Ariizumi (8445) on the death of his father in Spokane, Nov. 1.

To Hal Norris (8471) on the death of his mother in Reno (but a resident of Portland, Ore.), Oct. 21.



DON SWEENEY (8355)

Supervisory Appointments

MIKE HALL to supervisor of Monitoring Systems Division II 342, effective Nov. 16.

Mike joined SNLL in May 1976 as an MTS in an advanced development group. He also worked in Phase 1 and 2 weapon development and the W79-W82 project division at Livermore before transferring to the 300 organization in Albuquerque about three years ago. Since then he's been involved with systems research and monitoring systems work.

Mike has a BS in physics and mathematics from Brigham Young University, and two MSs — in astrophysics and nuclear engineering — also from BYU.

He enjoys the study of architecture and has a private pilot's license, so he spends some of his leisure time flying. Mike and his wife Glenda have two sons. They live in Corrales.

JOHN HOLMES to supervisor of Receiver Technology Division 6226, effective Nov. 1.

John has been a member of the technical staff in the Solar Thermal Test Facility Division since he joined the Labs in April 1976, and has been responsible for operations at the solar tower site since then.

Before he came to Sandia, John worked for 15 years at Argonne National Laboratory in Illinois and Idaho, where he was a group leader for nuclear fuel cycle activities: fuel synthesis and reprocessing, and liquid metal technology.

He has a BS in chemical engineering from the University of Wisconsin and an MS in the same field from UC Berkeley.

John is an avid jogger and enjoys fishing. He and his wife Mitzi have two children. They live in the NE Heights.

PAUL LONGMIRE to manager of Fire Sets Department 2360, effective Oct. 1.

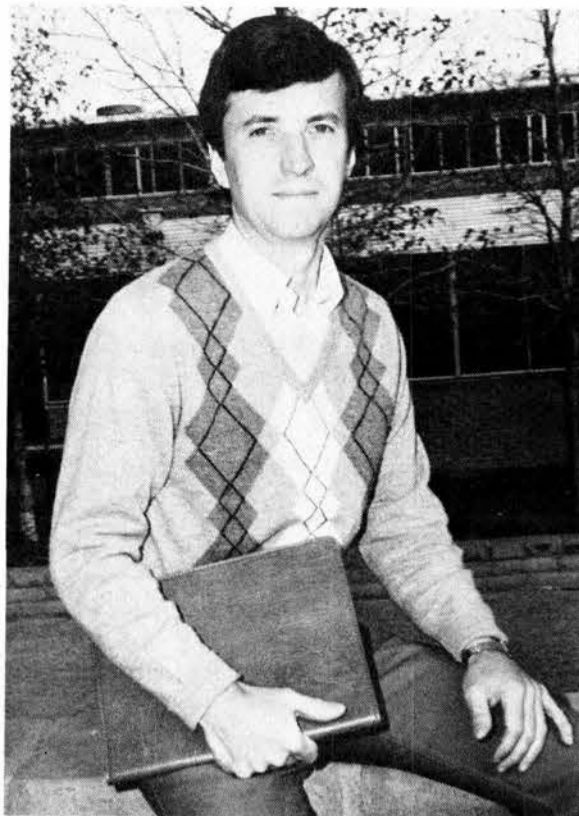
Paul joined Sandia as a Technical Development Program (TDP) participant in June 1962. He worked on systems reliability evaluations in the Reliability Department until 1970. He then transferred to the weapons system development directorate and worked on the W74 and modernizations of the B57 and B61. In 1976 he was promoted to supervisor of the W80 Development and Test Division, the job he held most recently.

He has a BS in EE from Ohio State University and received his MS in the same field at UNM in the TDP.

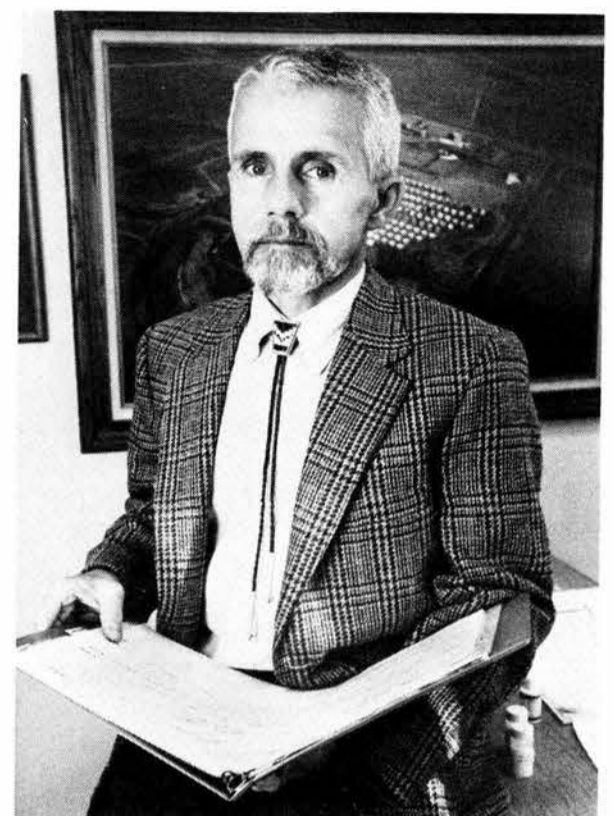
Paul enjoys participating in many athletic activities. He and his wife Patricia have two daughters. They live in the NE Heights.

MILO NAVRATIL to manager of Field Instrumentation Department 7120, effective Nov. 16.

Milo joined the Labs as a technician in a weapons development group in December 1956. In 1967 he moved to the field test organization as an MTS. Two years later he was promoted to supervisor of the Electronics Division at TTR. He subsequently headed divisions involved with data reduction and telemetry advanced development. Most recently he's been supervisor of the ASW (Anti-Submarine Warfare) Test Division.



MIKE HALL (342)



JOHN HOLMES (6226)



MELODIE OWEN (4021), PAUL LONGMIRE (2360), and MILO NAVRATIL (7120)

Milo earned his BS in EE from UNM, and, as a TDP participant, received his MS in the same field from UNM in 1967.

His leisure activities include gardening, skiing, and swimming. Milo and his wife Barbara live in the NE Heights. They have two grown children.

MELODIE OWEN to supervisor of Financial Division 4021, effective Dec. 1.

Melodie joined Sandia as a member of the laboratory staff in the general accounting organization in June 1979. A year and a half later, she moved to the financial policies and procedures group, where her work included preparation of Labs accounting instructions and procedures. She subsequently worked in the Gross Receipts Tax Division and the Management Information and Results Division before her promotion to supervisor of the Payment Processing Section a year ago.

She received both her BBA and MBA in accounting from ENMU. After graduation from Eastern, Melodie worked for an Albuquerque CPA firm for almost a year and a half before joining the Labs.

She holds a CPA certificate and is a member and past president of the American Society of Women Accountants. Melodie is also a member and past chair of the New Mexico Accounting and Management Seminar Board.

When she's not working, Melodie spends time on stained glass art and calligraphy. She lives in the NE Heights.

Congratulations

Renae Dietz (6250) and Greg Solether, married in Albuquerque, Nov. 14.

Betty and Kent (6257) Biringer, a son, Kevin Lloyd, Nov. 20.

Patricia Allen (7523) and Ron Trelue (5252), married in Albuquerque, Nov. 22.

SDI: A 'Mixed Bag' in Europe

David Fishlock, science editor of London's *Financial Times* (the British version of the *Wall Street Journal*), recently described how Europe is reacting to the technological challenge posed by the Strategic Defense Initiative.

"SDI is too subtle for the mass public," he said. "It fails to grip the imagination. The abbreviation communicates nothing whatsoever [scattered laughter]. Well, maybe it does to some people in this audience.

"'Star Wars,' on the other hand, is the technical equivalent of a Malay word that means 'let's sit around without clothes on and tell rude stories.' Like the Malay word, 'Star Wars' is a journalist's dream. It already has variants: 'store wars' in merchandising, 'star peace' from the Soviets, and 'charm wars,' in reference to the new Soviet foreign minister, Shevardnadze.

"It's a tall order to cover Star Wars from Europe because it's a mixed bag of nations," Fishlock continued. "But you have won the attention of our friends in Eastern Europe much like the farmer who wants to talk to his mule — first he has to wave a big wooden stick. We now have the attention of the Russians."

Essentially, Fishlock's talk dealt with how Western Europe is reacting to the technological challenge posed by U.S.-initiated SDI research. When Presi-

dent Reagan delivered his "Star Wars" speech in March 1983, there had been no diplomatic consultation and the speech contained no hint that the SDI umbrella might extend to Europe. Today, the SDI debate is strongly polarized even in the United States; in Europe, which is much less homogeneous politically, it is correspondingly harder to whip up political support for the program.

Beyond SDI, Europe's concern is to close the technological gap with the U.S. and Japan. Too often, European countries have tended to "go it alone," neglecting vital issues such as reducing trade barriers or agreeing on technical standards that would make it easy for companies to market their products widely.

"Europe is getting a taste for collaborative research," said Fishlock. "Major multinational electronics companies are sharing their research through such projects as the European Commission's Esprit program and Eureka, being pushed by France and now under discussion by seventeen West European countries. They started doing this so they could compete with Japanese firms such as Toshiba and Matsushita that have twice the cash per employee of their closest German competitor. These are not research funds but total cash reserves held by the company — 'money in the bank,' so to speak. Japanese companies spend much more on research

than do American, German, or British companies."

Fishlock went on to say that these collaborative efforts will also put the Europeans in a stronger position to share in SDI research, which has the potential of pumping a lot of money into the European economy. His brief rundown of the status of SDI in selected countries: "Britain and Germany are most clearly in favor of participation. No so France, which is trying to persuade others to join Eureka. The Dutch will not participate officially, but individual companies may take part. Italy yes, but Spain, with a very left-wing government, probably no."

Summing up, Fishlock said that the Russians know a crash SDI program will exacerbate their areas of weakness in information technology ("which, after all, is what SDI is basically"), even if it never works out. "SDI should be regarded as a lid or cork on Russian aggression to prevent it from spilling over into other areas of the world," he concluded. • Carl Mora (400)

(For further reading see: Richard Hudson and Peter Gumbel, "Europe's High-Technology Eureka Project Is Beset by Squabbles, Inadequate Funding," *The Wall Street Journal*, Nov. 5, 1985, p. 36; Peter Marsh, "European Industry Joins for High-Tech Push," *The Christian Science Monitor*, Oct. 8, 1985, p. 21; Elizabeth Pond, "Europe Moves Toward High Tech Cooperation With Eureka Project," *CSM*, p. 10; "Eureka?" *The Economist*, Nov. 8, 1985, p. 18.)

Take Note

A six-hour teleconference on "Hazardous Waste Management" will run from 8:30 a.m. to 3 p.m. at UNM's Center for Continuing Education (University at Indian School NE) on Dec. 12. Presented by Wayne Turner and Richard Webb, who recently completed a two-year research project for DOE on the subject, the teleconference will include lectures, a film, and a 200-page handout. Participants will be able to question speakers through a telephone hook-up. Enrollment fee is \$175; call Guillermo Grenier at UNM on 277-9060 for more information.

* * *

Stan Reynolds (7535) is this year's chairman of the Recorders and Reproducers Committee of the RCC (Range Commanders Council) Telemetry Group. The RCC is composed of people who operate the nation's missile ranges. He's also a THIC director; that is, he represents users on the board of the Tape Head Interface Committee, a user-industry group devoted to solving problems with recording tapes used for instrumentation.

* * *

Mike Mundt (5151) has been promoted to the rank of major in the U.S. Army Reserve. He's in the Security, Plans, and Operations Directorate of the 156th Support Group.

* * *

The NM Solar Energy Institute at NMSU

is seeking people throughout the state who are using active solar air systems (without storage). The Institute plans to evaluate the effectiveness of such systems and needs users to fill out a brief questionnaire about their systems and homes. More info from The Sun Dial, 800/432-6782.

* * *

Another retirement planning seminar, sponsored by Prudential-Bache, is set for the Coronado Club at 5 p.m. on Dec. 11. For more info, call Bill Sellers on 881-2323.

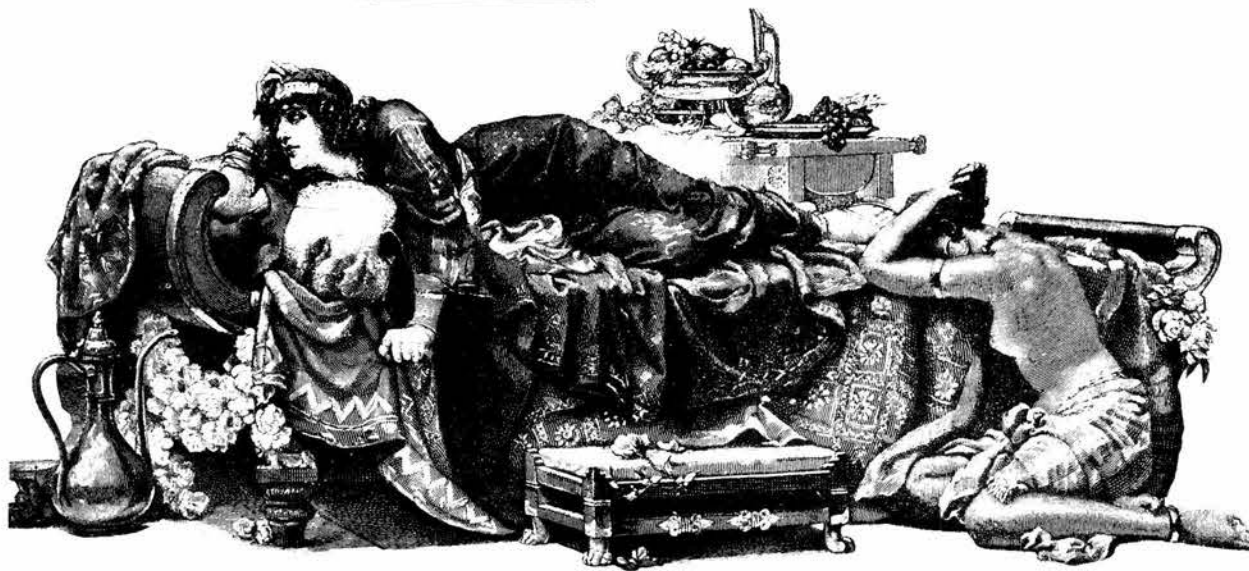
* * *

Lee Garner (3151) has had another of his

tongue-in-cheek articles published in the current issue of the *Journal of Irreproducible Results*. Lee's article, "Deplorable Destruction of Longitudinal Study of Post-Hypothermic Resurrection," notes that the recent excavation of two explorers frozen during an 1846 Arctic expedition has completely ruined Lee's great grandfather's plan to determine whether "the human body could be resurrected after 200 years of hypothermia in a natural milieu." The premature exhumation has now destroyed "the most noble scientific experiment ever conceived and attempted."



IN A CEREMONY in Washington last week, Gordon Osbourn (left), supervisor of Electronic and Transport Phenomena in Solids Division 1132, received the E. O. Lawrence Memorial Award for outstanding contribution in the field of atomic energy. Specifically, he was cited for working out the theory of strained-layer superlattices (LAB NEWS, Oct. 25, 1985). DOE Secretary John Herrington presented Gordon with his citation, a medal, and a \$10,000 prize.



WILL the LAB NEWS *never* arrive?

Continued from Page One

- each issue. We're proud of that.
3. We thank you for taking us home. So do the people who empty your wastebaskets.
 4. Technical stories and management news rate high. That's certainly as it should be. But tying management news in being rated outstanding, with 41 percent each, was the classified ads page. And that figure includes the Livermore respondents who have an understandable reluctance (see related story) to get very excited about the bargains available to Albuquerqueans.
 5. Savings Bond news, ECP news, VIA news, Colloquium Reports, and Retiree Roundup aren't so popular. What can we say? You don't like to be asked for money

- or time. If you didn't get around to going to the Colloquium, that means you weren't interested in the subject in the first place. And, of course, the retirees weren't asked their opinion.
6. Ah, we're a health-conscious group, aren't we? Medical Corner could use more detail, albeit less than 30 percent asked for it. And you'd like more depth in Feedback answers. So would we. Mention that fact to your director next time you're doing lunch together.
7. The State of the Labs message is probably the most significant story we publish all year. Unlike company publications that carry a "President's Message" every issue (it usually deteriorates over time into a lukewarm endorsement of safety, productivity, or quality control), LAB NEWS prefers to run a comprehen-

And We Reply . . .

Most survey respondents wrote in comments, some pro, some con. Let's get a few specific criticisms out of the way first.

Technical stories are too long.

I don't understand a word of the technical articles.

Tech stories are too simplistic. The LAB NEWS staff's biggest challenge — even bigger than getting solid answers to Feedbacks or getting the rationale underlying management decisions — is to cover some of the most challenging scientific and technical work being conducted in the nation. That work is seldom simple; if it were, it would have been done long ago. At the same time, we try — hard — to explain what's been done, how it was done, why it was done, and why it was important to do it — all in a way that the non-scientist can understand. And you want us to do all that briefly? Well, we'll try not to waste words. And we are using more "related stories" (journalists call them sidebars) so no one story is so long it overwhelms the reader.

Sympathy and Congrats columns are not complete, so why do it? We depend on the line organizations for birth, marriage, and sympathy items. You call, we print.

In addition to the Albuquerque- and Livermore-related features, how about some articles on our communities? [from a TTR- or NTS-based reader] Once we're fully staffed again, we hope to provide at

least occasional coverage of Nevada Sandians' hometowns.

Your decision a few years ago to drop the "Speakers and Authors" column is regrettable. Publications are a major and lasting contribution by members of the technical staff, and recognition of this effort should be made available to the entire lab. We agree that publications are important, but we feel that long lists of article titles make stultifying reading. And publications become part of each author's personnel record, so both current and prospective bosses can see them.

Rating	No. of People*	Percent
Great	57	8
Very Good	370	54
Okay	239	35
No Opinion	18	3
Only Fair	5	1
Poor	0	0
TOTALS	689	101**

*As statistically adjusted to correct for non-response bias

**Rounding error acknowledged

sive, in-depth interview with the president once a year. That article represents a great deal of work for our staff — and for the president. We're glad you give it high marks.

8. The fact that our historical context is valuable is not surprising: Of the Sandians to whom we mailed the survey, 51 percent have been on roll fewer than 10 years. In other words, most of our readers — and most of the Labs' population — are relative new hires who weren't here throughout most of Sandia's history. Quite a few weren't even born until the 60s.

9. The perceived lack of credit for technicians and other support people is a common criticism of our tech stories. We're aware of the problem, and we'll try — diligently — to remedy it.

So much for the quantifiable side. See the next story for some of the pithier comments.

What You Said About Us

The LAB NEWS just reflects Sandia's attitude toward graded employees — they're "un-people." For example, new secretaries, technicians, clerks are never listed in the "Welcome" column. Not so; we list all new employees.

When you run photos of retiring employees, tell us how many years they've put in. Good idea. We're now doing that.

Number the pages. We've finally given in to this perennial complaint and are now numbering at least some of the pages.

I rate the paper "okay" but I'd rate it (Continued on Next Page)

Thanks, Livermore

SNLLers Like What They Read

With a few perfectly understandable exceptions, Livermore readers rate the LAB NEWS just as highly as do their Albuquerque counterparts.

Although it's true that fewer of them (in terms of percentages) read most of each issue, more of them take the paper home and more of their spouses read it than in Albuquerque.

The SNLL folks rate the management news articles as outstanding even more often than do the SNLA employees (52 percent to 38 percent). And, naturally, they're much in favor of the Livermore page (69 percent call it outstanding).

Just as naturally, they're noticeably less ecstatic about Coronado Club news, Vista New Mexico, and the classified ads. But, all in all, their ratings and comments indicate that they react to most articles in just about the same way that the Albuquerque employees do.

And a couple of Livermore people commented specifically that the LAB NEWS is what reminds them that they're part of a larger organization — "with headquarters somewhere to the east," said one. (We prefer to believe that that reminder has some value.)

Survey Comments

"great" if Feedback had better answers. LAB NEWS should prod directors to give good, direct answers that apply to the questions. Directors (and the Legal staff, which also must okay Feedbacks we want to publish) are seldom proddable.

On the other hand: Feedback questions always sound as though they're written by cry-babies.

Here's a provocative one: Livermore gets less emphasis in the LAB NEWS and, for its share of the Labs population, does more to contribute to the Labs' efforts than does Albuquerque. No comment. We have friends in both locations.

Why don't you have question-answer columns on garden lore, solar tips, legal hot line, helpful hints, consumer advocate? Generally, we'll leave those to the daily papers and the various magazines. But we'll cover any of them if there's a Sandian involved.

You should run a column on bicycling (accidents, incidents with the military, the need for a Mardix booth for bikers, etc.) We're overdue in running an article on Sandia biker-commuters, but we don't plan a regular feature on the subject. (And whatever happened to the Sandia Bike Association?)

The "Antojitos" column makes a highly visible target, and several respondents commented on it. As might be expected, opinions ran the gamut from "Stupid" to "Love it," from "Inappropriate for a technical newspaper" to "My favorite part." We plan to retain the column; if nothing else, it gives you something to argue about with your office mates.

Indulge us now — these are the kinds of comments that keep us going:

Overall, the paper is well done, superior to other company papers I've seen.

Exceptional for a house organ. Especially enjoy puns, humorous headlines and captions. Most house organs are so self-righteous and humorless. Thanks. LAB NEWS is mailed to some 6000 non-employees, and one of our primary goals is to reflect a Sandia that's populated by interesting people, that's a challenging place to work, and that has a lively sense of humor. Sandia is not stodgy — the company newspaper needs to reflect that fact.

Good job. Would like to see weekly edition. [The shriek you hear emanates from the editor.]

I only wish it had more pages so it could contain even more articles and features. As it is, it's outstanding — all the time.

One of the best laboratory publications I've encountered.

Excellent reading material for employees to see just what is going on.

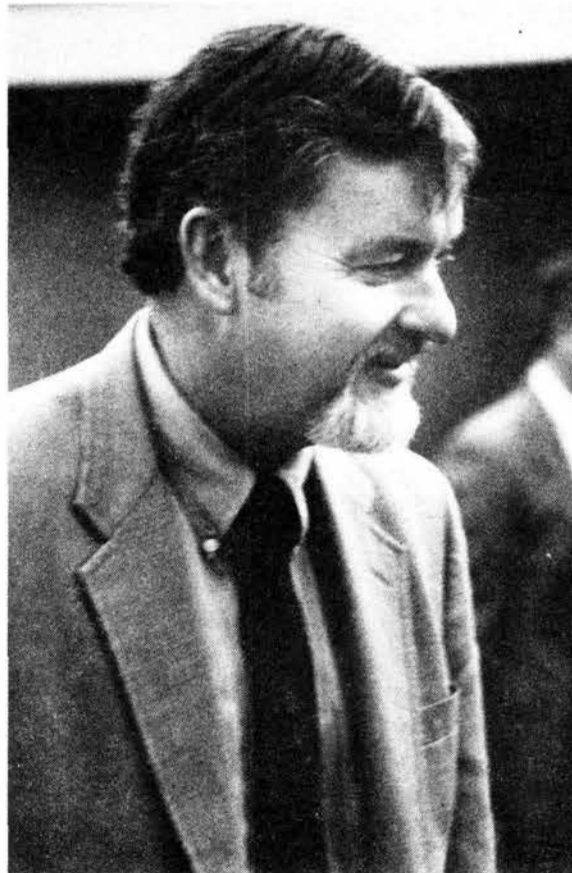
People look forward to getting it. That's the best compliment one can make. Thanks to all of you.

Finally, the pro-nerd spokesman says: *Basically, we're all lost out here anyway. The LAB NEWS helps to keep us aware of every other Friday.*

Former Sandians Return



PONDERING A PBFA-II POINT, Klaus Bowers listens to Pace VanDevender (1200) explain the concepts underlying the soon-to-be-fired accelerator. Klaus, now VP of Electronics Technology at AT&T Bell Labs, was a director in the components group at Sandia from 1971 to 73 and served as VP of Components from 1973 to 75. "The work at Bell Labs keeps me hopping," he says. "Different challenges, but the essence is similar — high quality of people at both places. I'm pleased that the work we did when I was here to get the funding necessary for the 'cookie factory' [Center for Radiation-hardened Microelectronics] has paid off."



ONLY "NATIVE SANDIAN" to serve in AT&T Technologies management is Al Narath. He came to Sandia in 1959 and rose through the ranks to Executive VP in 1982. In 1984, Al transferred to his current position as VP of Government Systems with AT&T Bell Labs. "AT&T's a good place to be too," Al notes.



SOL BUCHSBAUM, now Executive VP of Customer Systems at AT&T Bell Labs, was Sandia's Research VP from 1968 to 71. "You people are doing some good work," Sol says. "I'm especially pleased to hear about the impressive work coming out of the research organization."



FORMER SANDIA CONTROLLER Warren Corgan (1969-72) is now VP of Federal Systems for AT&T Technology Systems. "I always enjoy returning to Sandia," says Warren. "This [the Technology Transfer Center] is certainly a lot nicer than any meeting space we had when I was here."



SANDIA'S DIRECTOR of Purchasing from 1974 to 79 was Larry Conterno. He's now Director of Personnel at AT&T Technology Systems. "I'm enjoying what I'm doing there," he reports. "And I'm pleased to see so much building going on at Sandia. I get the impression that Sandia is being managed very well." (Photos by Russ Smith, 3155)

Patent Issued on Peak Power Ratio Generator

A patent on a peak power ratio generator has been issued to the DOE in the name of its inventor, Bob Moyer (7242).

The generator is a signal conditioning module used with a commercial power meter to measure peak power in radar signals with pulse widths down to seven nanoseconds (billionths of a second). Until now, the best commercial system could measure only those pulse widths of fifteen nanoseconds or more.

Many modern radar systems use very narrow pulses occurring at high repetition frequencies. Bob explains that measurement of the peak power in these wave trains is a difficult problem when pulse widths are extremely narrow. "However, since narrow radar pulses allow greater range measurement accuracy and better target resolution, I was asked to think of a way these measurements could be made," he says.

Bob came up with a device that splits the incoming signal (the one whose peak power is to be measured) into two signals — a source and a reference. The waveforms of the two signals are identical in shape to that of the incoming signal; they differ only in amplitude. The source signal amplitude is directly proportional to that of the incoming signal before it split; however, the peak amplitude of the reference signal is maintained at a fixed known level.

The two signals feed into a dual channel

power meter, which is set to measure the ratio between the average power in the source signal and the average power in the reference channel. "The key point is this: since the wave shapes of the two signals are identical, the ratio of their peak powers is therefore equal to the ratio of their average powers," says Bob. "So the measured ratio of the average powers combined with the known peak power level in the reference signal makes it possible to determine the peak power in the incoming signal."

A hybrid analog/digital loop in the generator maintains the peak power in the reference channel at the predetermined level, no matter what the input. Key elements in the loop include a back diode detector that operates at a constant peak power level, regardless of the peak level of an incoming signal; a thermally stable tunnel diode, which serves as a constant level sensor and as a binary memory element for the loop; and an attenuator to control the amplitude of the reference signal.

A sensor detects any reference signal higher than the predetermined level and, through a controller, signals the attenuators to cut back the signal's amplitude.

The power meter gives a continuous readout, comparing the incoming signal with the reference signal, thereby establishing a way to measure the incoming



BOB MOYER (7242) calibrates his recently patented peak power ratio generator before a test to measure peak power of an incoming radar signal. The dual channel commercial power meter on top of the generator gives a continuous readout, comparing the incoming signal with a reference signal, thereby establishing a way to measure the incoming signal's peak power. The generator can measure narrow pulses occurring as often as 75 million times per second.

signal's peak power, even though it may consist of very narrow pulses occurring as often as 75 million times per second.

Charlie Still (7242) was responsible for mechanical design and fabrication work on the ratio generator.

Fun & Games

Bowling — SANDOE'S bowler-of-the-month awards for October went to David Norwood (2122) and Dora Gunckel (6410), high men's and women's scratch series; and Vic Chavez (DOE) and Dottie Castro (DOE), high men's and women's handicap series. Winners of the SANDOE Scotch Doubles Tournament in November were Jane (7843) and Dennis (1254) Nations; second place went to Tom Lutz (6248) and Mae Lambert (1845). It's not too late to get in on the fun. Contact Dora Gunckel at 4-4052 for info on how you can join SANDOE.

Sympathy

To Dana Flowers (3426) on the death of her grandmother in Atlanta, Nov. 15.

To Charles Trauth (7252) on the death of his father in Albuquerque, Nov. 20.

Prime at 40,000?



... "Computer scientists using one of the world's fastest computers believe they have found the largest prime number yet — one that contains nearly 40,000 digits ... Knowing a prime number larger than all others does not offer much benefit to society or to anyone but a handful of mathematicians, but it is a feather in the cap of the supercomputer that finds it — in this case, a Cray XMP, which sells for about \$9 million. The new prime number, which has yet to be verified, is 2 raised to the 132,049th power minus 1, a number with 39,751 digits. If printed, the number would fill more than one entire newspaper page ... 'It's like racing computers,' said David Slowinski of Cray Research Inc. in Chippewa Falls, Wis., makers of the Cray XMP and its predecessor, the Cray-1. Using these machines, Slowinski found the two previous largest primes as well as the latest one, which was found recently on an experimental machine in the company's offices."

Lee Dembart in *Philadelphia Inquirer*



THESE INTENSE YOUNG MUSICIANS are among the 90 members of the Albuquerque Youth Symphony, an honor music organization for high school students celebrating its 30th anniversary next year. To commemorate the auspicious event, AYS plans a European concert tour in June to Austria, Greece, and Rumania. To help defray the expenses of the trip, the kids (and their parents) are busy with a variety of fundraising activities. Since children of Sandians make up about a quarter of the AYS membership, many Sandians are already aware of these activities. Tonight there is a benefit concert featuring Rumanian-born violinist Eugene Sarbu at UNM's Keller Hall. The concert starts at 8:15; tickets are \$15. If you'd like to help AYS get to Europe, details on tonight's concert or other AYS fundraising activities are available from Charlie Karnes, Carl Mora (both 400), Don Benoist (7213), or Barry Butcher (1542). Oh yes, the French horn players are Suzy Chambers, daughter of Bill (1822), and Heather Dawson, daughter of Ralph (1141).



Here are some current volunteer opportunities for employees, retirees, and family members. If you would like more information, call Karen Shane (4-3268).

THE NATURE CONSERVANCY is a non-profit organization committed to preserving biological diversity by protecting areas of special beauty that are refuges for threatened wildlife and rare plants. The Corrales Bosque Preserve is its most recent task. TNC needs help with its speakers bureau. People with public speaking experience are needed to talk to garden clubs, school and nature groups, and business clubs. Tools and training are provided.

UNITED NEGRO COLLEGE FUND needs a volunteer with word processing skills to help out for a few hours on a one-time project.

MARCH OF DIMES is conducting its annual education/fund raising drive on the weekend of January 24-26. Volunteers are needed to canvas their blocks during this Mothers March on Birth Defects.

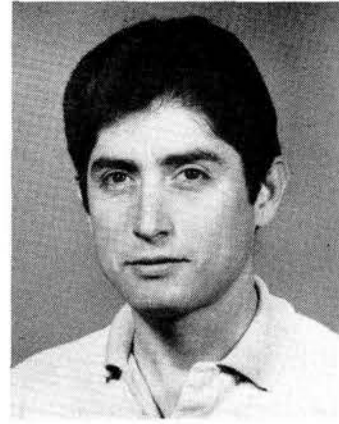
MILEPOSTS

LAB NEWS

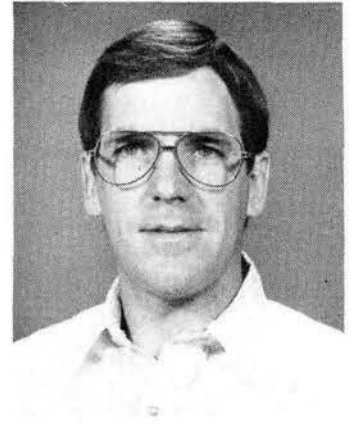
DECEMBER 1985



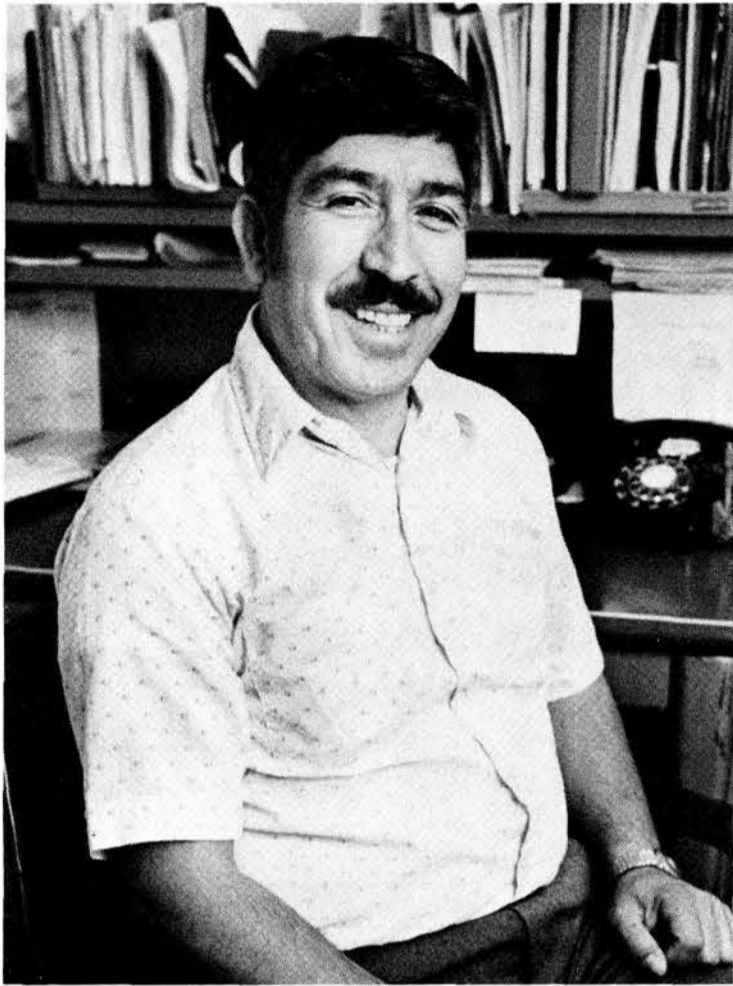
Gene Thomas (8262) 10



Gerald Gallegos (7813) 15

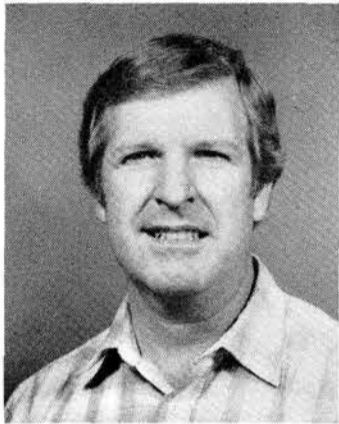


Mark Wilkins (2634) 10



Nestor Zamora (3423)

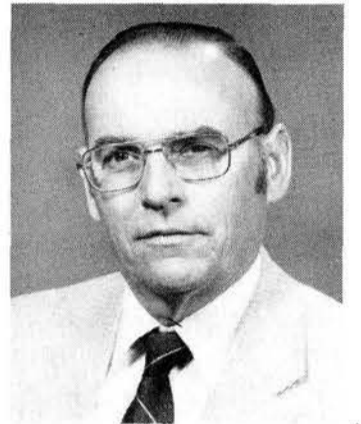
20



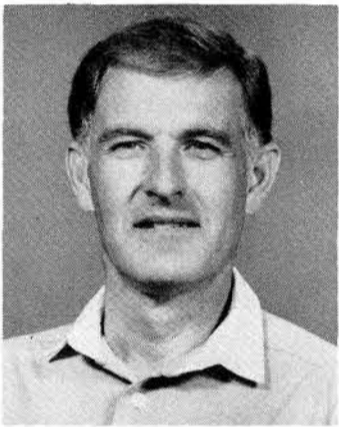
Jim Banks (6248) 10



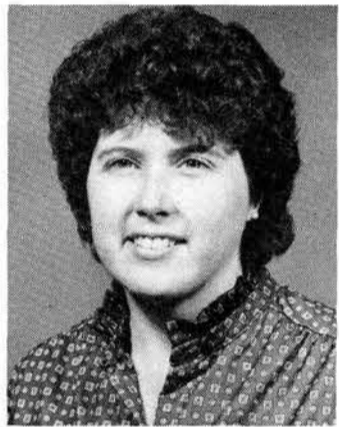
Cecil Mock (2312) 35



Ralph Johnson (7240) 20



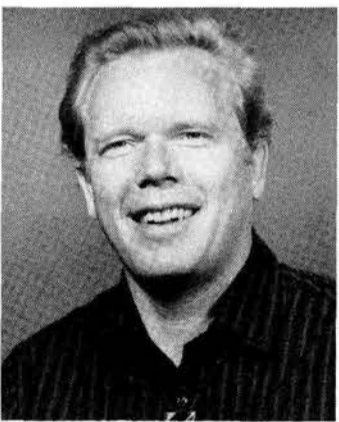
Russ Haushalter (7242) 15



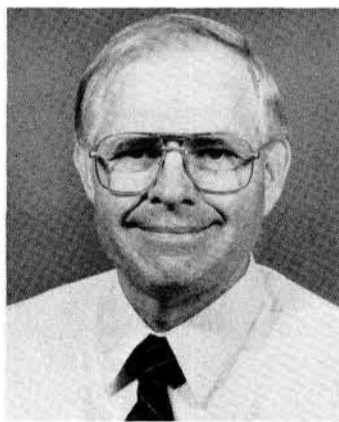
Mary Gonzales (7241) 10



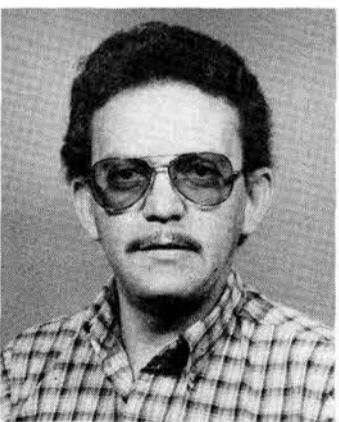
Andy Cardiel (8184) 20



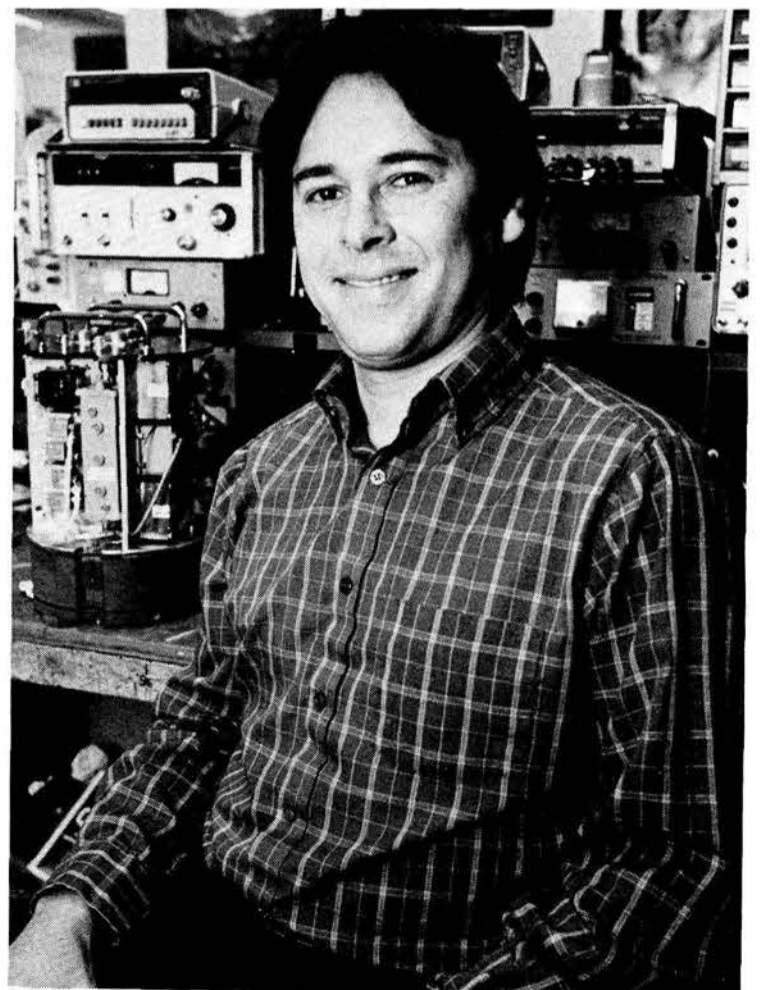
Terrence Gerlach (1543) 10



Frank Dean (5152) 20



Johnny Ruybal (1653) 10

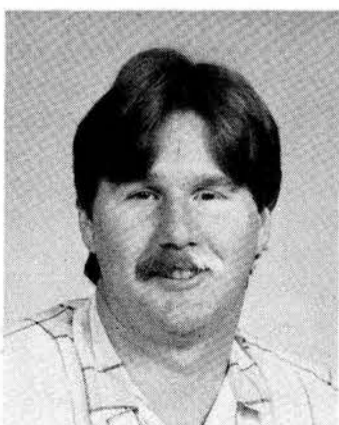


Art Romero (5143)

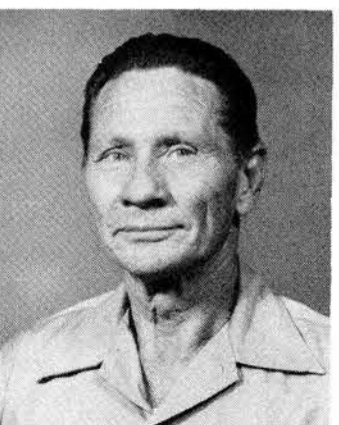
10



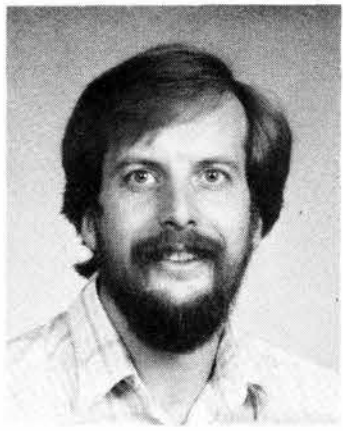
Bob Dungan (2533) 25



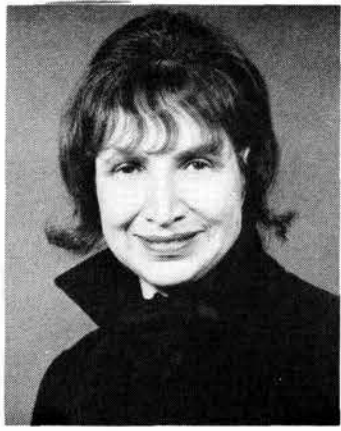
Brian Chamberlain (8024) 10



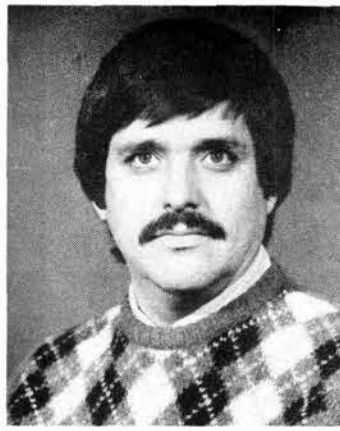
Alton Simpson (7811) 35



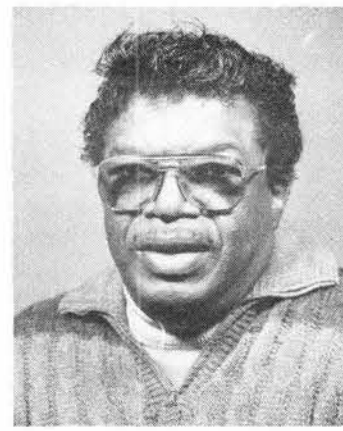
Al Verberkmoes (8347) 10



Michael Butteri (3732) 30



Paul Brannan (5266) 10



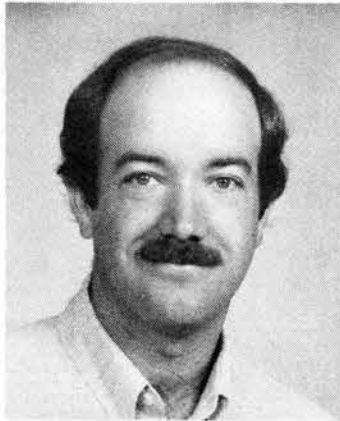
Clarence Walker (3427) 10



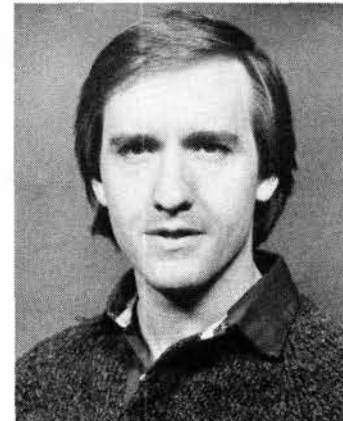
Marge Mederios (8183) 20



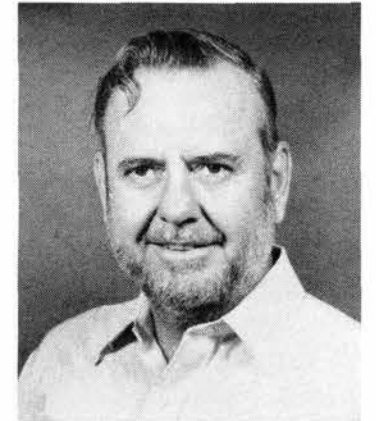
Judy Ewing, M.D. (3330) 10



Steve Haney (8343) 15



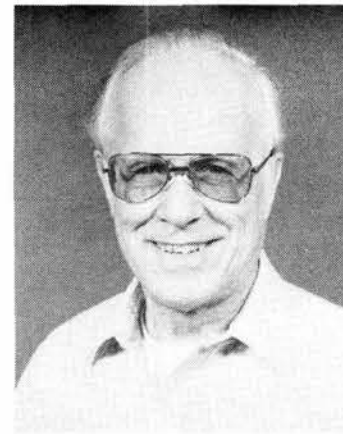
Paul Attermeier (5324) 10



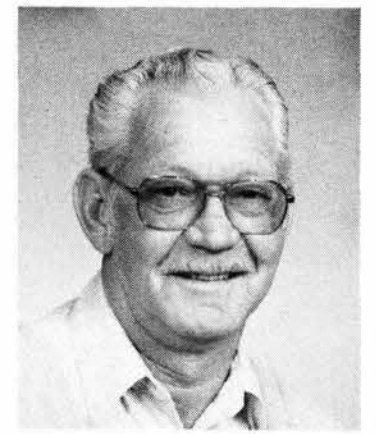
Ross Yingst (5111) 25



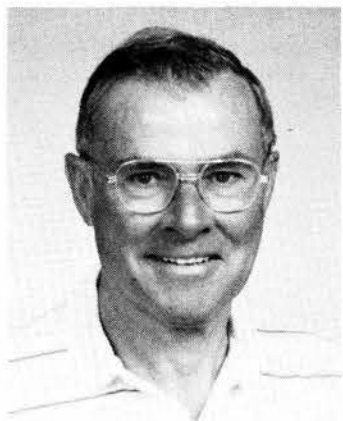
Fred Luetters (5266) 10



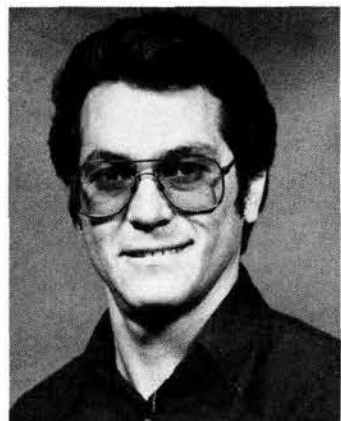
Bob Adams (5252) 30



Jim Workman (8254) 10



Hank Lucas (8263) 20



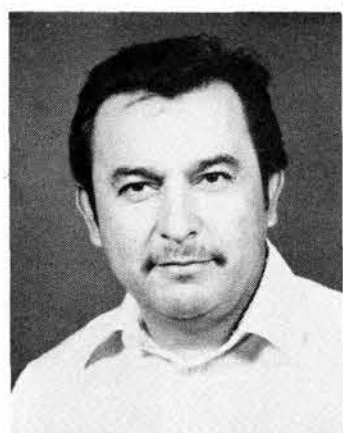
Victor Baca (3423) 10



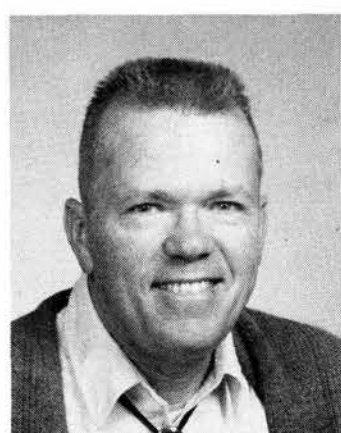
Thelma Harrell (310) 20



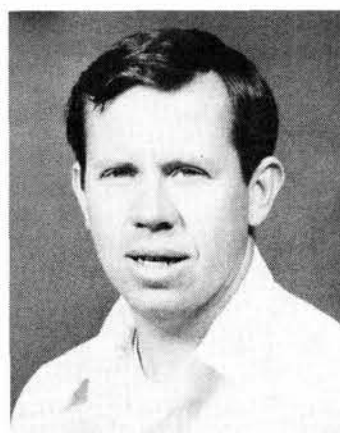
Sheila Guynes (6225) 10



Albino Garcia (7484) 10



Jerry Hunting (8162) 25



Steve Johnston (2313) 10

Albuquerque

Linda Burkhardt (3426)
Roger Case, Jr. (7263)
Jacqueline Kerby (3726)
Valerie Locaspino (3426)
Sharon Bremer (21)
Tommie Gillespie (21)
John Hamilton (3426)
Kathleen Hovorka (21)
Udella Kump (22)
Kathryn Lindell (21)

Welcome

Lilita Meirans (2811)
Connie Nenninger (22)
Faye Schultheis (21)
Mary Thompson (21)
Becky Wilcox (22)
California
Stephen Dwyer (7842)
Illinois
Kevin Killeen (1126)

Douglas Ruby (6224)
New Mexico
Diane Kolb (22)
Pennsylvania
Joseph Kitta (2335)
Texas
Gay Nell Harris (22)
Guylaine Pollock (1511)
Utah
Vicki Bruch (3745)

UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS

Deadline: Friday noon before week of publication unless changed by holiday. Mail to: Div. 3162.

Ad Rules

1. Limit 20 words, including last name and home phone.
2. Include organization and full name with each ad submission.
3. Submit each ad in writing. No phone-ins.
4. Use 8½ by 11-inch paper.
5. Use separate sheet for each ad category.
6. Type or print ads legibly; use only accepted abbreviations.
7. One ad per issue per category.
8. No more than two insertions of same ad.
9. No "For Rent" ads except for employees on temporary assignments.
10. No commercial ads.
11. For active and retired Sandians and DOE employees only.
12. Housing listed for sale is available for occupancy without regard to race, creed, color, or national origin.

MISCELLANEOUS

SANDIA T-BIRD caps and T-shirts available in Lab News office, Bldg. 814, Rm. 1, \$7 each. Benefits So. 14 Village Project.

10-SPD. BIKE, 26", \$35; two weightlifting benches, one inclines w/leg curls, \$35; one flat, \$15. Aragon, 881-4795.

CEILING TILE, 300 sq. ft., white w/gold veins, \$75. Anderson, 294-8451 after 5.

DIRECT-DRIVE STEREO TURNTABLE, Radio Shack LAB-400, w/ tone arm, cartridge, wood-grain base and dust cover, \$80 firm. Kobs, 281-1102.

5-GAL. GLASS BOTTLES (2), for wine making, \$9 each. Bollig, 294-8077.

8-TRACK and AM/FM radio; car stereo unit, \$35 firm. O'Bryant, 268-9049.

MONITOR, amber, 9-inch, USI Model PI-4, \$60. Caffey, 296-3320.

SNAP-ON top chest, two black Naugahyde bar stools. Fine, 268-4491.

COLEMAN CRAWDAD 11'2" BOAT, uses up to 5-hp motor, never used, \$250. Whitehead, 292-1604 after 5.

SHOTGUN Model 37, Ithaca Featherlite, 2¾" chamber, pump, 12-gauge, ribbed, w/case, \$150 firm. Marquez, 344-8455.

DYNACO STEREO, 120-watt amp, PAS-2 preamp, and Heath AJ-15 tuner in wood case, Bluebook \$163, sell for \$95. Caskey, 294-3218.

SKIS, Rossignol Prima 727, 170cm, Salomon 222 bindings, \$60; Dynafit boots, size 8, \$30; bibs, \$10; Riney, 299-1457.

FREE FERTILIZER, composted horse manure w/wood shavings, good for gardens, 15 truck loads available, you dig, you haul. Moore, 345-4030.

COMPUTER, TRS-80 color, 32K, disk drive, printer, power controller, covers, word processing, Logo, graphics, bridge tutor, manuals, \$400. Montague, 255-2670.

COMMODORE 64 w/modem and tape deck, new, \$130. Navratil, 293-5527.

TYPEWRITER, Smith-Corona manual, Sterling model, w/hard carrying case/dust cover, \$15. Barr, 821-5870.

LARGE GAS STOVE, white porcelain, 45 years old, \$50. Ayotte,

268-1864 after 5.

DAN WESSON 357 MAG., new, \$165; Tasco 15x30x45x60 scope and tripod, \$50; pinball machine, \$200. Baker, 294-3334.

WOMEN'S WINTER BOOTS, Hushpuppies, moon boots, sizes 6/6½; 2 innerspring mattresses, twin size, both \$75. Brockway, 247-9460.

WHITE ELECTRIC STOVE, 4-burner, 30-inch, \$100; 1200-egg redwood incubator, \$350. Lackey, 898-6638.

BAR STOOLS (2), maple, 30" high. Sedillo, 255-0669.

AIR CLEANER for GM-V8 w/2 barrel carburetor, \$25; camera body, Pentax ME w/defective shutter, \$20. Bolden, (415)443-9184.

ELECTRIC DRYER, Sears Lady Kenmore, \$50. Danneels, 831-6582.

CAMERA, PENTAX 110SLR, lenses, \$200; Sony TV camera, \$700; doll house, lights, furniture, unused, \$500. Kjeldgaard, 268-8835.

FOUR 33x12.5x15 all-terrain tires on 10x15 chrome spoke rims, \$200 for all. Nelson, 881-0148.

NEW old-model Winchester Model 70, .30/06, \$275. Haaker, 293-1077.

TV, 12" B&W RCA with adjustable height brass pole, \$40. Rainhart, 821-3690.

WHIRLPOOL, apartment-size washer and dryer, 3 cycles, water level control, harvest gold color, \$300. Parker, 294-5618.

ZENITH 21" B&W TV, \$75; RCA 25" color TV, \$100; Panasonic stereo, \$100; men's rink skates, size 7, \$25. Azouz, 266-3512.

MANUAL OLIVETTI/UNDERWOOD w/script type, case and stand included, reasonable. Harrison, 883-5411.

3-PC. SECTIONAL, cream color w/two coffee tables, \$400 OBO. Liguori, 255-7551.

EARLY AMERICAN COUCH and tables in earth tones; king-size bed; gold and rust recliner. Chaves, 255-6155.

FLOOR LAMP, \$20; video cabinet, locking doors for tapes, sliding shelf for VCR, wood construction, cost \$260, asking \$95. Robinson, 255-0114.

WHIRLPOOL Space Saver washer and dryer, apartment size, \$300 for pair. McAllister, 296-7774.

DINETTE TABLE/4 chairs, \$45; coffee table/2 end tables, \$50; gold fabric chair/ottoman, \$80. Falacy, 293-2517.

GOLF CLUBS, McGregor Persimmon Custom Tourney, 1-3-4-5, \$175; irons, Pine Cory 3-9, P&S putter, \$120; metal driver, \$25. Davies, 296-6905.

19" COLOR TV, not working but fixable, \$10. Van Deusen, 291-8196.

REALISTIC 4-channel stereo receiver w/8 track recorder and 4 speakers, 250 watts, 65/channel, \$250 OBO. Romero, 864-2479.

KENMORE PORTABLE DISHWASHER, \$200; King Airtight wood stove, thermostat control, \$295. Tucker, 877-1140.

HAMMOND ORGAN w/bench, \$650 OBO. Stuart, 255-3146 evenings, 265-7315 days.

GIRL'S WHITE CAPTAINS BED, chest of drawers, night stand, \$100 OBO. Prusak, 296-1571.

AUTHENTIC EUROPEAN BABY BUGGY, brown corduroy cover, homemade cushions, \$375 OBO; AM/FM/record player/dual cassette, \$125 OBO. Tibbetts, 293-2856.

TWO NAVAJO RUGS, 60x90; 1842 French pistol, other old guns at appraisal; Western saddle, \$250; ping-pong table, \$75. Harley, 898-6035.

LOBO BASKETBALL TICKETS, 4 Mezzanine seats, Dec. 21, Alabama; 27, 28, Lobo Invitational; Jan. 2, Utah; 4 BYU, \$7-7.50 each. Grumblatt, 294-4738.

CAMERA LENS, Asahi Pentax, screw mount, 1:5.6/200mm & 1:35/35mm, both for \$35. Strait, 842-1695.

DISHWASHER, Frigidaire, Custom Imperial, 5-level, undercounter, avocado, rebuilt motor, needs door seal and door interior touch-up. Foster, 299-6240.

TWIN BEDS, two sets mattresses, box springs and frames. Switendick, 884-0153.

SANYO AUTOMATIC WASHER, apartment size, 3 wash cycles, \$75. Beardsley, 292-5910.

DP GYMPAC 1000 EXERCISER, \$175; couch, \$65; king-size, dual-control electric blanket, \$20. Purcell, 296-4986.

REFRIGERATOR, harvest gold; queen-size foldout couch; area rug, nearly new twin-size mattresses; kids' ski boots, misc. sizes. Carson, 292-5553.

BABY CRIB, white w/orange trim, bumper pad/mattress, \$40; several Kachinas, 8-18", \$75-150. McGee, 299-0661.

COMPLETE PANASONIC VIDEO CAMERA; portable stereo VCR w/extras. Laskar, 299-1024.

IBM SELECTRIC II TYPEWRITER w/correction feature, paid \$1000, make reasonable offer. Caton, 294-4490.

'84 JAYCO pop-up camper, sleeps 6, heater, deluxe package, \$2900. McMurtry, 881-8053.

TABLE SAW, 10" Rockwell, \$250; patio glass panels & screens; photo enlarger; small electric motors. Johnston, 299-1830.

DUAL-KING innerspring/mattress, firm, w/linens, \$250; lady's/man's wedding/engagement ring set, VS-1-H (appraised \$2054), \$1500 or sell separately. Sharp, 293-2055.

WROUGHT-IRON CHAIRS, indoor, cushioned, scroll legs/back, 6 magenta, 3 gold frame, \$30/ea., \$9/\$250. Hill, 294-2850.

TWO USED TIRES, 195/70, HR-14, \$10 for both; homemade dog house, \$10. Padilla, 877-2116.

ATARI 2600 and five game cartridges, \$65; 4 rims w/tires, fit Toyota, Datsun, Chev., \$40. Lucero, 294-2546.

NEW HAMILTON WHITEHALL MANTEL CLOCK, Westminster chime, still in original box, retails \$495, priced \$375. Willis, 881-8077.

HUMIDIFIER, 10-gal., furniture-type, \$50; 5-drawer dresser, \$50. Schubeck, 821-3133.

RUGS, some broadloom, gray, green, rectangular; round, scatter rugs, various sizes. Joseph, 888-0826.

LUMINARIAS, to benefit Albuquerque Youth Symphony, \$4/doz., free delivery over 3 doz., order by December 8th. Miyoshi, 821-9118.

SIBERIAN HUSKY/COLLIE, free; jet black kitten; bicycle built for two, \$95 OBO; upright piano, make offer. Stixrud, 298-0478.

PENTAX SPOTMATIC CAMERA, older through-the-lens metering, 50-, 135-, 35-mm, screw mount lenses, all for \$50. Phipps, 299-3151.

FREE, bridesmaid dress, size 8, worn only once in celebrity wedding, possible teenage girl's prom dress. Stephens, 821-7960.

TRANSPORTATION

10-SPD. BICYCLE w/new baskets, seat and handlebars, w/water bottle, pump and chain/lock. Shortencarier,

292-3575.

'84 PLYMOUTH Turismo, Rally package, aluminum wheels, removable sun roof, 40 mpg, take over payments. Loving, 298-0338.

'78 CHEV. PICKUP, Scottsdale, insulated camper shell, 50K miles, 350 V8, AT, PS, PB, AM/FM cassette, \$3950. Rivord, 296-9151.

'64 RAMBLER American, Model 330, 2-dr. sedan, AT, one owner, 6-cyl., radio, low mileage. Baars, 255-9051.

BICYCLE, 20", convertible (boy's or girl's), \$60. Widman, 293-7279.

'82 FORD Custom Van, AT, AC, PS, PB, TW, 4 captain's chairs, bed, icebox, 55K miles, \$1500 down, take over payments. Allison, 265-0027 after 5.

BIKES, girl's 26", 3-spd., boy's 20"; solid wood toy box, 20"x26"; \$20 each item. Petruno, 265-1826.

'77 VW Super Bug, low mileage, asking \$2900 OBO. Toledo, 888-4348, after 5.

'81 HONDA Accord, one owner, 34K miles, new brakes, AC, AM/FM, 5-spd. Roth, 344-7060.

'76 MERCURY Monarch, 4-dr., AT, V8, new Imron paint, radials, \$1500. Rouckus, 892-7808.

'75 PLYMOUTH Gran Fury Brougham V8, 4-dr., hardtop, new tires, AC, PS, AT, PB, AM/FM/stereo. Korbin, 821-8461.

RALEIGH SUPER COURSE 10-spd. bicycle, 23" frame, \$125. Haaker, 293-1077.

'67 4X4 SCOUT 800, 266-V8, positraction, dual tanks & exhaust, good for icy driveways, add snowplow, \$1300. McAllister, 296-7774.

'77 CHEV. stn. wgn., Malibu Classic, 350 V-8, AC, PS, PB, \$1600. Miller, 266-7388.

CJ-5 JEEP, white metal top, 304 engine; 304 engine parts; curtain/drapery rods. Otts, 884-5072.

'79 VW Scirocco, AM/FM stereo, sun roof, louvers, alloy wheels, \$2500. Percival, 299-6606.

'81 FORD Escort GLX, 3-dr. hatchback, 4-spd., AM/FM stereo/tape, AC, PS, good gas mileage. Molina, 296-7855.

'77 FORD Econoline van, extended roof, many extras. Vancil, 299-7211.

'74 DODGE Dart 2-dr. hatchback, slant 6, 3-spd., radio, heater, \$1000 OBO. Edmonds, 884-5974.

'83 CHEV. Silverado 4X4, ¾-ton, 30K miles, one year warranty, loaded, \$10,500 OBO. Rush, 293-7405.

'80 TOYOTA 4WD PICKUP, long bed, 50K miles, camper shell, PS, tilt, AC, etc., \$4500 OBO. Froehlich, 296-5226 after 3.

'75 HONDA Civic CVCC, 2-dr. hatchback, AM/FM radio, AC, 95K miles, \$1335. Arthur, 256-7359.

V8 VOLKSWAGEN, 350/350, tube frame, narrowed 12-bolt, \$1500; '57 oval bug, pearl paint, chrome undercarriage, \$3500, offers/trades? Tibbetts, 293-2856.

'80 EAGLE SW, 4X4, AC, AM/FM, cruise, loaded, \$4150. McMullen, 888-1478 after 5:30.

'74 CORVETTE Stingray, 350 engine, AT, PS, PB, PW, T-tops, asking \$2500. Gentry, 298-3574.

'81 PONTIAC Gran-Prix, V8, AT, PS, PB, AC, electric windows, AM/FM/tape, 60K miles, one owner, new tires, below book. Morrison, 877-7425.

'74 BUICK Century, 4-dr., PS, PB, AC, AM, 95K miles, \$900. Reuter, 884-8347.

'81 FORD F-100, short bed, 6-cyl., 300 cu. in., 4-spd., stereo, chrome

rims, asking \$3200. Smid, 344-8430.

'71 CHEV. Impala, under 77K miles, PS, PB, AC, SB rads, \$1500. Buss, 298-1589.

'73 CHEV. C20, 350, AT, PS, PB, AC, cruise, AM/FM tape, CB, 3 tanks, shell w/bed, mounted snow tires, towing equipped. Sublett, 884-4426.

'79 TRANS AM, AT, AC, PB, PS, built-in Jensen stereo w/equalizer, \$3900. Chavez, 836-1089.

'82 TRANS AM, red, AT, AC, T-tops, \$8200. Tuttle, 881-2031.

'75 CORVETTE, white/black interior, 350 V8, AT, PS, PB, PW, AC, new tires/brakes, \$8000. Hillhouse, 822-0060.

'78 HONDA Accord, 5-spd., hatchback, AM/FM, PB, rear defrost, wiper and washer. Shoaf, 898-4893.

'82 TOYOTA Celica GT Liftback, AT, AC, PS, PB, cruise, sunroof, sheepskins, shade kit, 47K miles. Lassiter, 299-1492.

'74 FORD Maverick, 4-dr., 6-cyl., AC, AT, PS, \$1300. Padilla, 877-2116.

'57 CHEV., sta. wgn., 6-cyl., \$2200; motorcycle, 90cc, SL90, needs work, \$45 OBO. Pierce, 299-2801.

'82 FIREBIRD, dark brown, AT, AC, PS, PB, AM/FM/cassette, 37K miles, TA radials, \$7500. Nickerson, 299-3101.

'85 RANGER 4X4, under 2K miles, extras, retail \$14,000, now \$10,900, or \$600 down and assume payments. Davidson, 294-6128.

REAL ESTATE

'69 DINA BROOK MOBILE HOME, handyman special w/some materials and some furnishings included. Brockway, 247-9460.

'64 MARQUETTE MOBILE HOME, 10'x55' w/enclosed porch, Alameda area, \$6500. Lackey, 898-6638.

8% ASSUMABLE FHA mortgage on 3-bdr. townhouse on corner lot near Ladera, terms. Roberts, 831-2107.

EXTRA LARGE ONE-BDR. HOUSE, close to Wyoming gate, fenced lot, privacy. Liguori, 255-7551.

3-BDR., den, patio w/gas grill, large enclosed back yard, alley access, by Coronado Center, \$68,500. Aragon, 877-9174.

TWO BIG BEDROOMS, hardwood floors, kiva fireplace, spacious den, updated cabinets/appliances, 5412 Granite NE. Perea, 255-6447.

'64 10'x55' MOBILE HOME, remodeled, 2-bdr., 1½ bath, appliances + washer and dryer, partly furnished, 5 minutes from SNLA, \$7200. Marquez, 293-2895.

WANTED

CAR POOL, Taylor Ranch area, non-smokers. Sanchez, 897-0743.

LEASE OR BUY, 2-horse trailer for use during Christmas holidays. Miller, 873-3450.

LAND, North Valley, 1 acre lot or larger; single-story apartments, central location preferred. Brooks, 265-8612.

BOY'S 20" BICYCLE; wood bookcase for boy's room; large terrarium. Locke, 299-1873.

HOW TO HOST A MURDER (game); I have The Grapes of Frath; want to trade for other versions. Dell, 291-0274.

ROOMMATE, own room and bath, \$225/mo. plus ½ utilities, non-smoker please. Levin, 299-0891.

HAMILTON WHITEHALL MANTEL CLOCK in good condition. Willis, 881-8077.

S. Claus Visits Tomorrow, Kids!

MR. S. CLAUS is scheduled to make his annual appearance at the Club tomorrow morning at the kids' Christmas party, so you'd better be good, you better not cry...The yearly holiday bash for members' children will start at 9:30, with cartoons, carol singing, and a puppet show on tap. Then the jolly old fellow who's checking his list twice will show up about 11:30. Don't worry — he'll get there somehow, snow or not. Admission charge for all this fun is \$1 per child, or a can of food for the needy.

THE CORONADO WOLFPACK swings into holiday action tomorrow night, Dec. 7, with its annual Christmas party in the Eldorado room. Honcho Ken Deller (5322) hopes for a record turnout of wolves (some 75 showed up last year) for this event, which gets started at 7 p.m. with cocktails. A sit-down dinner featuring prime rib and all the trimmings, followed by music and dancing, will round out the evening. The \$12.50 per person cost includes freebies during the cocktail hour (one free drink ticket, chile con queso, guacamole, etc.), dinner and a free bottle of wine, music and dancing, tax and tip. It's late, but you can still get in on the frivolity by calling Ken *right now* at 4-6776.

THUNDERBIRD RV CLUB members will get together on Dec. 10 at 6:30 p.m. at Bella Vista Restaurant for a short meeting and Christmas dinner. Cost is \$7/person, and includes wine and appetizer. Call Betty Brown, 281-3608, no later than tomorrow to sign up. Open to all RV Club members and prospective members.

YOU'VE HEARD THE ONE about "the check is in the mail," right? Well, the '86 membership cards are also in the mail to all you folks who pay C-Club dues by payroll deduction. If you don't receive your card in the next week or so, give the Club office crew a call so they can check out their address records.

THUNDERBIRD retiree card players — Don't forget to shuffle off to the group's Christmas party and card playing session next Wednesday, Dec. 11, starting at 10:30 in the Eldorado room. The action includes all kinds of goodies to munch on while you're wowing them with that grand slam or filling that inside straight.

PLEASE DON'T TELL US you haven't signed up yet for that getaway cruise in the Caribbean next February. Time is slipping away — the reservation deadline is a week from today. From Feb. 15-22, you can lose those winter blues by heading for San Juan, Puerto Rico, to board the Sun Princess for visits to six ports of call. Between ports, on board that fabulous cruise ship, you'll enjoy gourmet food five times a day, dancing and floor shows, games and movies, pool, exercise, sauna, massage — we could go on and on, but you get the idea. The \$1415-\$1572 per person tab covers round trip air fare from ABQ to San Juan, transportation from San Juan airport to the Sun Princess pier, port

and departure taxes, and onboard accommodations. Call either the Club Office or Zia Travel Services right now. Goodbye snow, hello beach.

THUNDERBIRD RETIREES — If you want to keep tabs on what your Board of Directors has up its sleeve, come on out to the Board meeting on Dec. 9 at 3 p.m. at the Club.

THERE'S ONLY ONE two-for-one special Friday night dinner this month because of all the private parties going on. So if you want to get in on that greatest of all deals, mark your calendar for two weeks from tonight, Dec. 20. Prime rib or shrimp peel are featured on the menu that night — two dinners for \$12.95. The Isleta Poor Boys will be on the bandstand with their famous country-western music. Tell your friends you read it here first.

RING OUT THE OLD, ring in the new at the Club's big New Year's Eve party Tuesday, Dec. 31, starting at 7 p.m. Two great bands — the Bob Banks Trio in the Eldorado room and Together in the ballroom — are booked for your dancing and listening pleasure. The low, low price of \$25 per couple or \$13 for singles will cover all that entertainment, party favors and noise makers, hors d'oeuvres, free bottle of champagne with breakfast at midnight. You're not going to find a better New Year's Eve bargain anywhere else, so call in your reservation right now. Reservations are a *must* for this one, by the way; the deadline is Dec. 20.

NEXT MEETING of the Coronado Ski Club will be on Tuesday, Dec. 17, in the Club ballroom at 7 p.m. People from Purgatory will be on hand with a film and presentation on the development of a new ski area there, "The Legends," open this year for the first time. Mr. S. Claus will be making yet another appearance (he likes all the holiday fun at the Club, too), lots of hors d'oeuvres will be available, and the usual exciting door prizes will be up for grabs.

A reminder — some Ski Club members are off at Wolf Creek this weekend, but two other trips are coming up this month: Purgatory, Dec. 13-15; and Utah, Dec. 27-Jan. 2. Sharon Mackel, 6-3190, and Steve Ross, 4-7017, have details.

THUNDERBIRDS — If you miss that card players' Christmas party, you have one more chance to get in the holiday spirit. Sunday, Dec. 22, retirees will gather in the Club ballroom from 1-5 p.m. for snacks, open cash bar, and a Christmas carol sing-along. No charge for the fun, so come out to see all your friends.

THE C-CLUB CREW needs a vacation too, so the Club will be closed from Dec. 25 through the end of the month (except for the New Year's Eve bash, of course). Come out for the "Close-Down" party in the lounge on Dec. 24 from 12 noon-6 p.m.

Events Calendar

- Dec. 7 — "Pito Perez," award-winning play starring Manuel Guizar, KiMo Albuquerque-Mexico artists exchange program, co-sponsored by Partners of the Americas, 8 p.m., KiMo.
- Dec. 7-8 — "Sleeping Beauty," Albuquerque Children's Theatre, 1:30 and 3:30 p.m. both days, Popejoy Hall, 277-3121.
- Dec. 8 — Bach Christmas Oratorio, UNM Combined Choir and Orchestra, 4 p.m., First United Presbyterian Church, 277-4402.
- Dec. 11 — Concert, UNM Band symphonic wind ensemble, free admission, 8:15 p.m., Keller Hall, 277-4402.
- Dec. 12 — Annual Our Lady of Guadalupe Feast Day: Spanish dance/drama "Los Matachines" (Jemez); Deer dance (Nambe); Bow and Arrow, Buffalo, and Comanche dances (Pojoaque); contact pueblos.
- Dec. 13-14 — Concert, New Mexico Symphony Orchestra (Purcell, Debussy, Schifrin); Neal Stulberg, conductor; Angel Romero, guitarist; 8:15 p.m., Popejoy Hall, 842-8565.
- Dec. 13-15, 20-22 — "Peter Pan," 8 p.m. Friday, 2 and 6 p.m. Saturday, 2 p.m. Sunday, Albuquerque Little Theatre, 242-4750.
- Dec. 14 — Las Posadas de Barelitas y Fiesta de Navidad (40th annual reenactment of the travels of Joseph and Mary before Christ's birth); Barelitas Community Center, 801 Barelitas Rd. SW; free; 843-7576.
- Dec. 15 — Movietime at the KiMo — Love to Laugh Series: "A Nous La Liberte," French (1931), English subtitles, 7 p.m., KiMo.



SECURITY INSPECTOR Keith Chavez (3435) recently won the Federal Category, Master Class, in the National Revolver Championships in Des Moines, Iowa. Keith beat out representatives from all other federal agencies — the FBI, U.S. Border Patrol, U.S. Customs, U.S. Treasury, U.S. Secret Service, U.S. Marshalls, U.S. Parks Service, and U.S. Postal Service — to take the Master Class. He received the first-place overall trophy, winning in a squeaker over Jerry Mortensen of the FBI by just two points, and was awarded gold medallions for each of the three individual matches he won at the competition. Keith's overall score was 1476 points out of a possible 1500. As a result of his Iowa showing, Keith has been invited to participate in the NRA National Action Pistol Tournament (Bianchi Cup) at Columbia, Mo., next spring. Limited to 200 participants, the Bianchi Cup tournament is the most prestigious pistol match in the world.